

WHAT IS CLAIMED IS:

1. A method for enabling analysis of proposed changes to program statements in a source code files, comprising:
 3. generating a data structure indicating a plurality of program statements in one or more source code files affected by one of a plurality of selected program statements to change in one or more source code files, wherein the data structure indicates a hierarchical relationship of the effect of program statements on one another resulting from change to the selected program statements; and
 8. processing the data structure to display information on the hierarchical relationship of the affect of the program statements on one another resulting from changes to the selected program statements.
1. 2. The method of claim 1, wherein generating the data structure comprises; generating an element object in the data structure for one selected program statement to change; and
 4. generating element objects in the data structure for program statements that are directly or indirectly affected by the selected program statements, wherein the element object representing one program statement is defined as a child element object to the element object for one program statement whose output parameter comprises the input parameter of the program statement represented by the child element object.
1. 3. The method of claim 2, wherein the element object is associated with an identifier of the source code file including the program statement for which the element object is generated and a line number where the program statement is included in the source code file.
1. 4. The method of claim 3, wherein the identifier comprises a location of the source code file.

1 5. The method of claim 2, wherein the data structure is implemented as an
2 extensible markup language (XML) file.

1 6. The method of claim 1, further comprising:
2 processing a database including information on program statements and program
3 artifacts in a plurality of source code files; and
4 generating result metadata indicating a program statements directly or indirectly
5 affected by changes to the selected program statements, wherein the program statements
6 indicated as affected by the proposed change are capable of comprising program
7 statements in the plurality of the source code files, and wherein the data structure is
8 generated from the metadata.

1 7. The method of claim 1, further comprising:
2 assigning at least one source code file to a project; and
3 importing the project to a software development tool to enable a programmer to
4 process the program statements in the at least one source code file assigned to the project.

1 8. The method of claim 7, wherein a system analyst generates the data
2 structure and assigns the source code files to projects that are imported to the
3 programmer software development tools to enable the programmer to process the
4 program statements indicated in the data structure as affected by the selected program
5 statements to change.

1 9. A method for analyzing proposed changes to program statements in a
2 source code file, comprising:
3 receiving a data structure indicating a plurality of program statements affected by
4 one of a plurality of selected program statements to change, wherein the data structure
5 indicates a hierarchical relationship of the effect of program statements on one another;

6 displaying the hierarchical relationship of the program statements affected by one
7 of the selected program statements;
8 receiving user input indicating selection of one of the displayed program
9 statements; and
10 enabling editing of the selected program statement.

1 10. The method of claim 9, wherein displaying the hierarchical relationship of
2 the program statements further comprises:
3 displaying one program statement affected directly or indirectly by changes to
4 one selected program statement; and
5 displaying one program statement as a child in the hierarchical relationship to the
6 program statement whose output parameter comprises the input parameter of the child
7 program statement.

1 11. The method of claim 9, wherein receiving the selection of one of the
2 displayed program statements comprises receiving user input directly selecting one
3 displayed program statement in the displayed hierarchical relationship.

1 12. The method of claim 9, wherein the data structure is capable of indicating
2 program statements affected by other program statements across source code files.

1 13. The method of claim 9, wherein enabling editing of the selected displayed
2 program statement further comprises:
3 determining one of a plurality of source code files capable of including the
4 selected displayed program statement;
5 accessing the determined source code file; and
6 displaying in an editing mode a plurality of program statements from the
7 determined source code file including the selected displayed program statement.

1 14. The method of claim 13, further comprising:
2 displaying information on proposed changes to the program statement affecting
3 the selected displayed program statement.

1 15. The method of claim 13, wherein the hierarchical relationship of the
2 program statements are displayed in a first pane on a graphical user interface panel and
3 wherein the plurality of program statements displayed in editing mode are displayed in a
4 second pane on the graphical user interface.

1 16. The method of claim 15, wherein a scrolling feature is used to view the
2 program statements in the hierarchical relationship in the first pane.

1 17. A system method for enabling analysis of proposed changes to program
2 statements in a source code files, comprising:
3 a computer readable medium;
4 a display monitor;
5 means for generating a data structure in the computer readable medium indicating
6 a plurality of program statements in one or more source code files affected by one of a
7 plurality of selected program statements to change in one or more source code files,
8 wherein the data structure indicates a hierarchical relationship of the effect of program
9 statements on one another resulting from change to the selected program statements; and
10 means for processing the data structure to display information on the display
11 monitor concerning the hierarchical relationship of the affect of the program statements
12 on one another resulting from changes to the selected program statements.

1 18. The system of claim 17, wherein the means for generating the data
2 structure performs:
3 generating an element object in the data structure for one selected program
4 statement to change; and

5 generating element objects in the data structure for program statements that are
6 directly or indirectly affected by the selected program statements, wherein the element
7 object representing one program statement is defined as a child element object to the
8 element object for one program statement whose output parameter comprises the input
9 parameter of the program statement represented by the child element object.

1 19. The system of claim 18, wherein the element object is associated with an
2 identifier of the source code file including the program statement for which the element
3 object is generated and a line number where the program statement is included in the
4 source code file.

1 20. The system of claim 19, wherein the identifier comprises a location of the
2 source code file.

1 21. The system of claim 18, wherein the data structure is implemented as an
2 extensible markup language (XML) file.

1 22. The system of claim 17, further comprising:
2 a storage medium;
3 a database stored in the storage medium;
4 means for processing the database including information on program statements
5 and program artifacts in a plurality of source code files; and
6 means for generating result metadata indicating every program statement directly
7 or indirectly affected by changes to the selected program statements, wherein the
8 program statements indicated as affected by the proposed change are capable of
9 comprising program statements in the plurality of the source code files, and wherein the
10 data structure is generated from the metadata.

1 23. The system of claim 17, further comprising:
2 means for assigning at least one source code file to a project; and
3 means for importing the project to a software development tool to enable a
4 programmer to process the program statements in the at least one source code file
5 assigned to the project.

1 24. The system of claim 23, wherein a system analyst generates the data
2 structure and assigns the source code files to projects that are imported to programmer
3 software development tools to process the program statements indicated in the data
4 structure as affected by the selected program statements to change.

1 25. A system for analyzing proposed changes to program statements in a
2 source code file, comprising:
3 means for receiving a data structure indicating a plurality of program statements
4 affected by one of a plurality of selected program statements to change, wherein the data
5 structure indicates a hierarchical relationship of the effect of program statements on one
6 another;
7 means for displaying the hierarchical relationship of the program statements
8 affected by one of the selected program statements;
9 means for receiving user input indicating selection of one of the displayed
10 program statements; and
11 means for enabling editing of the selected program statement.

1 26. The system of claim 25, wherein the means for displaying the hierarchical
2 relationship of the program statements further performs:
3 displaying one program statement affected directly or indirectly by changes to
4 one selected program statement; and

5 displaying one program statement as a child in the hierarchical relationship to the
6 program statement whose output parameter comprises the input parameter of the child
7 program statement.

1 27. The system of claim 25, wherein the means for receiving the selection of
2 one of the displayed program statements receives user input directly selecting one
3 displayed program statement in the displayed hierarchical relationship.

1 28. The system of claim 25, wherein the data structure is capable of indicating
2 program statements affected by other program statements across source code files.

1 29. The system of claim 25, wherein the means for enabling editing of the
2 selected displayed program statement further performs:
3 determining one of a plurality of source code files capable of including the
4 selected displayed program statement;
5 accessing the determined source code file; and
6 displaying in an editing mode a plurality of program statements from the
7 determined source code file including the selected displayed program statement.

1 30. The system of claim 29, further comprising:
2 means for displaying information on proposed changes to the program statement
3 affecting the selected displayed program statement.

1 31. The system of claim 29, wherein the hierarchical relationship of the
2 program statements are displayed in a first pane on a graphical user interface panel and
3 wherein the plurality of program statements displayed in editing mode are displayed in a
4 second pane on the graphical user interface.

1 32. The system of claim 31, wherein a scrolling feature is used to view the
2 program statements in the hierarchical relationship in the first pane.

1 33. An article of manufacture including code for enabling analysis of
2 proposed changes to program statements in a source code files by:
3 generating a data structure indicating a plurality of program statements in one or
4 more source code files affected by one of a plurality of selected program statements to
5 change in one or more source code files, wherein the data structure indicates a
6 hierarchical relationship of the effect of program statements on one another resulting
7 from change to the selected program statements; and
8 processing the data structure to display information on the hierarchical
9 relationship of the affect of the program statements on one another resulting from
10 changes to the selected program statements.

1 34. The article of manufacture of claim 33, wherein generating the data
2 structure comprises;
3 generating an element object in the data structure for one selected program
4 statement to change; and
5 generating element objects in the data structure for program statements that are
6 directly or indirectly affected by the selected program statements, wherein the element
7 object representing one program statement is defined as a child element object to the
8 element object for one program statement whose output parameter comprises the input
9 parameter of the program statement represented by the child element object.

1 35. The article of manufacture of claim 34, wherein the element object is
2 associated with an identifier of the source code file including the program statement for
3 which the element object is generated and a line number where the program statement is
4 included in the source code file.

1 36. The article of manufacture of claim 35, wherein the identifier comprises a
2 location of the source code file.

1 37. The article of manufacture of claim 34, wherein the data structure is
2 implemented as an extensible markup language (XML) file.

1 38. The article of manufacture of claim 33, further comprising:
2 processing a database including information on all program statements and
3 program artifacts in a plurality of source code files; and
4 generating result metadata indicating one program statement directly or indirectly
5 affected by changes to the selected program statements, wherein the program statements
6 indicated as affected by the proposed change are capable of comprising program
7 statements in the plurality of the source code files, and wherein the data structure is
8 generated from the metadata.

1 39. The article of manufacture of claim 33, further comprising:
2 assigning at least one source code file to a project; and
3 importing the project to a software development tool to enable a programmer to
4 process the program statements in the at least one source code file assigned to the project.

1 40. The article of manufacture of claim 39, wherein a system analyst
2 generates the data structure and assigns the source code files to projects that are imported
3 to the programmer software development tools to enable the programmer to process the
4 program statements indicated in the data structure as affected by the selected program
5 statements to change.

1 41. An article of manufacture including code for analyzing proposed changes
2 to program statements in a source code file by:

3 receiving a data structure indicating a plurality of program statements affected by
4 one of a plurality of selected program statements to change, wherein the data structure
5 indicates a hierarchical relationship of the effect of program statements on one another;
6 displaying the hierarchical relationship of the program statements affected by one
7 of the selected program statements;
8 receiving user input indicating selection of one of the displayed program
9 statements; and
10 enabling editing of the selected program statement.

1 42. The article of manufacture of claim 41, wherein displaying the
2 hierarchical relationship of the program statements further comprises:
3 displaying one program statement affected directly or indirectly by changes to
4 one selected program statement; and
5 displaying one program statement as a child in the hierarchical relationship to the
6 program statement whose output parameter comprises the input parameter of the child
7 program statement.

1 43. The article of manufacture of claim 41, wherein receiving the selection of
2 one of the displayed program statements comprises receiving user input directly selecting
3 one displayed program statement in the displayed hierarchical relationship.

1 44. The article of manufacture of claim 41, wherein the data structure is
2 capable of indicating program statements affected by other program statements across
3 source code files.

1 45. The article of manufacture of claim 41, wherein enabling editing of the
2 selected displayed program statement further comprises:
3 determining one of a plurality of source code files capable of including the
4 selected displayed program statement;

5 accessing the determined source code file; and
6 displaying in an editing mode a plurality of program statements from the
7 determined source code file including the selected displayed program statement.

1 46. The article of manufacture of claim 45, further comprising:
2 displaying information on proposed changes to the program statement affecting
3 the selected displayed program statement.

1 47. The article of manufacture of claim 45, wherein the hierarchical
2 relationship of the program statements are displayed in a first pane on a graphical user
3 interface panel and wherein the plurality of program statements displayed in editing
4 mode are displayed in a second pane on the graphical user interface.

1 48. The article of manufacture of claim 47, wherein a scrolling feature is used
2 to view the program statements in the hierarchical relationship in the first pane.